

****Your last test is marked and will be handed back today. If you did not pass, I am giving you the opportunity to receive a pass mark....in order to do this, you will need to come in at lunch hour on Wednesday (12 to 12:30) to go through the test (we will do this together with all who show up).**

Also, your marks have not yet been updated, but will be very shortly. I will let you know when they have been.

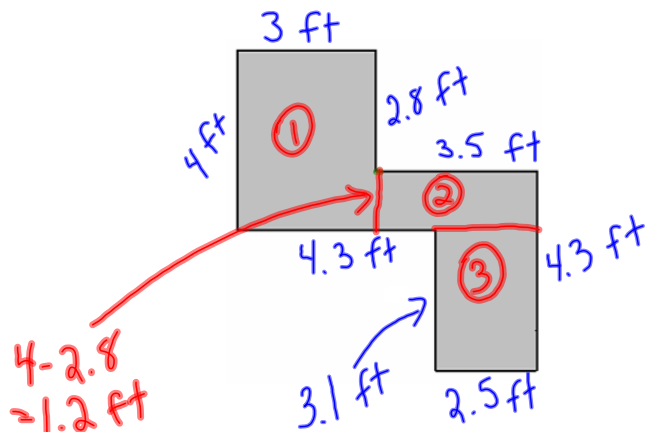
Lesson 6

Perimeter and Area of 2D Composite Objects

Finding the perimeter and area of the following shape.

Lesson 6

Perimeter and Area
of
2D Composite Objects



$$A = 12 + 4.2 + 7.8 \\ = 24\text{ ft}^2$$

$$\text{Perimeter} = 27.5\text{ ft}$$

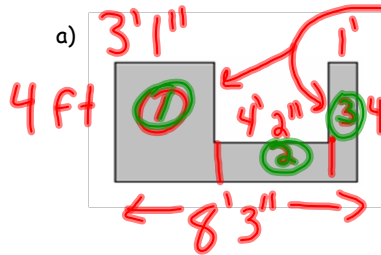
$$\textcircled{1} \text{ Area} = l \times w \\ = 3 \times 4 \\ = 12\text{ ft}^2$$

$$\textcircled{2} A = l \times w \\ = 3.5 \times 1.2 \\ = 4.2\text{ ft}^2$$

$$\textcircled{3} A = l \times w \\ = 3.1 \times 2.5 \\ = 7.8\text{ ft}^2$$

Please take out your worksheet
from yesterday

1. Find the perimeter and area of the following shapes. Show all your work.



$$P = 30'6"$$

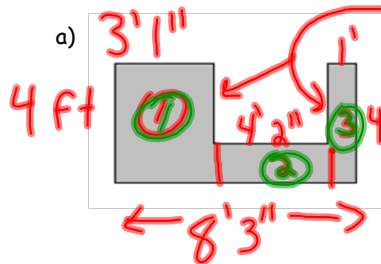
$$\begin{aligned} \textcircled{2} \quad A &= l \times w \\ &= 4'2" \times 1' \\ &= 4.167 \times 1 \\ &= 4.2 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad A &= l \times w \\ &= 4 \times 1' \\ &= 4 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \textcircled{1} \quad A &= l \times w \\ &= 3'1" \times 4' \\ &= 3.083 \times 4 \\ &= 12.3 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \text{Total Area} &= 12.3 + 4.2 + 4 \\ &= 20.5 \text{ ft}^2 \end{aligned}$$

1. Find the perimeter and area of the following shapes. Show all your work.



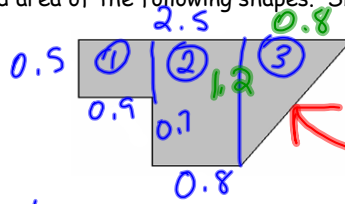
$$\begin{aligned} \textcircled{1} \quad A &= l \times w \\ &= 3'1" \times 4' \\ &= 3.083 \times 4 \\ &= 12.3 \text{ ft}^2 \end{aligned}$$

How to change feet and inches into just feet (in order to find area)

$$3'1" \rightarrow \frac{1}{12} = 0.0833$$

1. Find the perimeter and area of the following shapes. Show all your work.

b)



$$P = 2.5 + 1.4 + 0.8 + 0.7 + 0.9 + 0.5$$

$$P = 6.9 \text{ m}$$

$$\begin{aligned} \textcircled{1} A &= l \times w \\ &= 0.5 \times 0.9 \\ &= 0.45 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \textcircled{2} A &= l \times w \\ &= 0.9 \times 1.2 \\ &= 1.08 \text{ m}^2 \end{aligned}$$

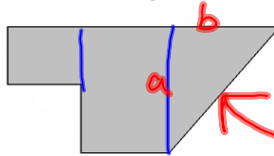
$$\textcircled{3} A = \frac{b \times h}{2} = \frac{1.2 \times 0.8}{2} = 0.48 \text{ m}^2$$

$$\begin{aligned} c^2 &= a^2 + b^2 \\ &= (1.2)^2 + (0.8)^2 \\ &= 1.44 + 0.64 \\ &= 2.08 \\ &= \sqrt{2.08} \\ &= 1.442 \end{aligned}$$

$$\begin{aligned} \text{Total Area:} \\ 0.45 + 1.08 + 0.48 \\ = 1.99 \text{ m}^2 \end{aligned}$$

1. Find the perimeter and area of the following shapes. Show all your work.

b)



You need to use the Pythagorean theorem in this question in order to find the perimeter of the object.

$$\begin{aligned} c^2 &= a^2 + b^2 \\ &= ()^2 + ()^2 \\ &= _ + _ \\ &= \sqrt{_} \\ &= _ \end{aligned}$$

2. Find the area of the shaded region. Show all your work.

a)

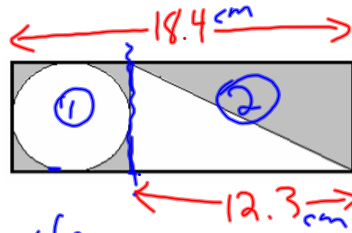
$$18.4 - 12.3 = 6.1 \text{ cm}$$

↳ diameter of circle and length of square

$$\begin{aligned} \textcircled{1} A &= l \times w \\ &= 6.1 \times 6.1 \\ &= 37.2 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} A &= \pi r^2 \\ &= (3.14)(3.05)^2 \\ &= 29.21 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{shaded area:} \\ 37.2 - 29.2 \\ = 8.0 \text{ cm}^2 \end{aligned}$$

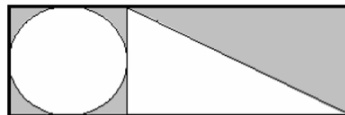


$$\begin{aligned} \textcircled{2} A &= l \times w \\ &= 12.3 \times 6.1 \\ \text{shaded area} &= \frac{75.03 \text{ cm}^2}{2} \\ &= 37.5 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Total} &= 8.0 + 37.5 \\ &= 45.5 \text{ cm}^2 \end{aligned}$$

2. Find the area of the shaded region. Show all your work.

a)



$$\pi r^2 = (3.14)(\quad)^2$$

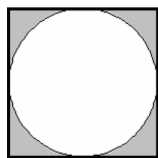
first +

The diameter is the distance across a circle (in any direction).

Dividing by 2 will give you the radius!

2. Find the area of the shaded region. Show all your work

b)



← 30 ft →

$$d = 30 \text{ ft}$$

$$r = \frac{30}{2} = 15 \text{ ft}$$

$$A = l \times w$$

$$= 30 \times 30$$

$$= 900 \text{ ft}^2$$

$$A = \pi r^2$$

$$= (3.14)(15)^2$$

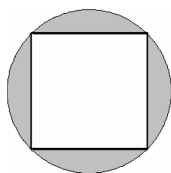
$$= 706.5 \text{ ft}^2$$

shaded area:

$$900 - 706.5$$

$$= 193.5 \text{ ft}^2$$

Calculate the shaded area inside the circle of perimeter 50π units.



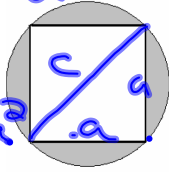
BONUS

Calculate the shaded area inside the circle of perimeter 50π units.

$$50^2 = a^2 + a^2$$

$$50^2 = 2a^2$$

$$\frac{2500}{2} = \frac{2a^2}{2}$$



$$A = \pi r^2$$

$$= (3.14)(25)^2$$

$$= 1962.5 \text{ units}^2$$

$$\sqrt{1250} = a$$

$$a = 35.35$$

$$A = l \times w$$

$$= 35.35 \times 35.35$$

$$= 1250$$

$$C = \pi d \text{ or } C = 2\pi r$$

$$50\pi = \pi d$$

$$d = 50$$

$$r = 25$$

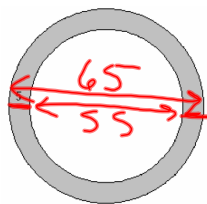
$$\text{Shaded area} = 1962.5 - 1250$$

$$= 712.5 \text{ units}^2$$

Calculate the shaded area of the ring, between the concentric circles, where width of the ring is 5 units and the diameter of the outer circle is 65 units.

$$d = 65 \quad r = 32.5$$

$$d = 55 \quad r = 27.5$$



$$A = \pi r^2$$

$$= (3.14)(32.5)^2$$

$$= 3316.6$$

$$A = \pi r^2$$

$$= (3.14)(27.5)^2$$

$$= 2374.6$$

$$\text{Shaded area} = 3316.6 - 2374.6$$

$$= 942 \text{ unit}^2$$

$$= 942 \text{ mm}^2$$